

## Appendix A

# Memory Requirements

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*When printing and scanning with multiple devices, adding more physical memory to your system may be necessary, and will increase performance. Ideally, each Printer Interface should have enough memory to image at least two (2) of the largest drawings you expect to print so that, one drawing can print while the other is processed (rasterized).*

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## **How to calculate the amount of RAM needed for each Computer:**

1. Find out how many RAM slots and which type of RAM the computer motherboard can use.
  - Check the motherboard specifications for SIMM or DIMM sizes and compatibility.
  - Most systems require SIMMs to be installed in multiples of two while DIMMs can be installed singly.
  - Some systems will also not allow you to mix and match different size SIMMs from different manufactures.
2. Determine which scanning and printing devices will operate concurrently using the computer.
3. Determine the print and scan length requirements.
4. Use the Imaging Memory and the Data Buffer Size Guidelines on the following pages to decide how much memory will be needed to operate each device.
5. Calculate the memory required.

### **To calculate:**

Do this for each printer:

1. Look up the amount of memory required for the largest size file that you print regularly. Enter that amount in the first blank in the equation that follows this list.
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- 2. If printing red and black images on the Xerox 8180 or MAX 200, enter the value **4** in the second blank. If you are printing with a Windows or Generic Embedded Controller **Color** Printer enter the value **6**; Otherwise, enter the value **2** in the second blank.
- 3. Now, multiply the two numbers and fill in the third blank with the result.
- 4. Memory needed for largest drawing generally being printed:

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(use the resulting figure in the calculation below)

NT OS and Apps.	PlotWorks Apps.	Printer1: #MB	Printer2: #MB	Scanner: #MB	Min. Total RAM
64 MB*	+	56 (+/-)MB	+	+	=

This example assumes the use of only two printers, however PlotWorks can accommodate up to four printers, and so memory must be added accordingly if you are planning to use more than two printers.

*\* At least 64 MB should be allocated, and more might be needed depending on your system (which Service Pack you are running, which device drivers and services are being used, and any other applications that consume memory, such as antivirus programs, etc.)*

Do this if you are using a Scanner Interface:

Look up the memory required for the largest size file that you will generally be scanning. Use this figure in the calculation below.

**Example calculation:**

The example below assumes PC system driving an 8855 for long prints, an 8180 printer for one color printing, and an 8180 scanner.

NT OS and Apps		Plot- Works		8180 printer		8180 Scanner		Total RAM
64 MB*	+	56	+	66	+	8	=	194

*194 MB minimum required divided by 128 (DIMM size) = 1.5. Thus, two 128MB DIMMs (256 MB total), are required for the PC.*

### **The Printer and The Scanner Interfaces**

The Printer Interface uses only a minimal amount of memory when not actively printing. When a print job starts, the Printer Interface will image (rasterize) as many drawings as it can into physical memory while sending them to the printer. This continues until it reaches the limit you set with Maximum Imaging Memory, or your operating system tells it that there is insufficient physical memory available.

You can set the Maximum Imaging Memory as high as 1 MB less than your physical memory, but keep in mind that the operating system will not allow the Printer Interface(s) and Scanner Interface to have all of that memory. The actual physical memory available on your system will depend on the applications, device drivers, services, etc. using the memory and the operating system on your computer.

Keep in mind, too, that the more memory the Printer Interface gets from the operating system, the less memory is available to other applications running on the system, such as the Job Editor, Network Polling, the Job Queue, and any other applications you are using. When your computer reaches the limits of physical memory, the operating system will start moving some or all of the Printer Interface and other applications out to the hard drive. Since the hard drive is much slower than physical memory, you might start noticing that these applications become less responsive and slower, and you might encounter problems using them. Therefore, it makes sense to limit the amount of memory that the Printer Interface is set to request.

For optimum PlotWorks performance, do not allocate more than is necessary for general day-to-day use. Increase the Maximum Imaging Memory (Printer Interface) and Data Buffer Size (Scanner Interface) only when needed for specific long print or long scan jobs.

### **Imaging Memory Setting Guidelines for the Printer Interface**

Maximum print lengths are approximate and are dependent on the other applications in use at the time of printing. The above calculations were made without nonprinting or nonscanning applications running.



***Note:*** Long prints can affect processing and printing speeds. Output speed will degrade with longer prints.

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***Xerox MAX 200 and 8180 Users:** Dual color printing requires double the memory amount shown on the chart. Also, please note that the 8180 has a maximum output size of 24" x 12' (or approximately 594mm x 3.7m) for single color prints.*

## Windows and Generic Embedded Controller Printers

Windows and Generic Embedded Controller color printers require approximately four times as much imaging memory as other printers to process color prints and long jobs. Be aware of this when determining the amount of RAM required for imaging.

### Approximate Maximum Lengths

<b>Detected Media Width</b>	in	in	in	in	in	in	in	in
<b>11 in.</b>	309	451	755	1059	1363	1667	1971	2275
<b>12 in</b>	284	415	695	974	1254	1534	1813	2093
<b>17 in</b>	199	291	487	683	879	1075	1271	1467
<b>18 in</b>	188	275	461	647	832	1018	1203	1389
<b>22 in</b>	154	226	378	530	681	833	985	1137
<b>24 in</b>	142	208	347	487	627	767	907	1046
<b>30 in</b>	113	166	277	389	500	612	723	835
<b>34 in</b>	100	146	245	343	442	540	638	737
<b>36 in</b>	95	138	232	325	418	511	604	698
	<b>66</b>	<b>96</b>	<b>160</b>	<b>224</b>	<b>288</b>	<b>352</b>	<b>416</b>	<b>480</b>

### Imaging Memory (in megabytes) Needed for the Printer Interface \*

<b>210 mm</b>	10404	15206	25449	35693	45937	56181	66425	76668
<b>297 mm</b>	7311	10685	17883	25082	32280	39478	46677	53875
<b>420 mm</b>	5202	7603	12725	17847	22968	28090	33212	38334
<b>594 mm</b>	3680	5379	9003	12626	16250	19873	23497	27121
<b>841 mm</b>	2614	3820	6393	8966	11540	14113	16686	19260
<b>257 mm</b>	8587	12551	21006	29461	37916	46371	54827	63282

<b>364 mm</b>	6011	8785	14704	20623	26541	32460	38379	44297
<b>515 mm</b>	4260	6226	10420	14615	18809	23003	27197	31392
<b>728 mm</b>	3006	4393	7352	10311	13271	16230	19189	22149
<b>914 mm</b>	2404	3514	5882	8249	10617	12984	15351	17719
	<b>66</b>	<b>96</b>	<b>160</b>	<b>224</b>	<b>288</b>	<b>352</b>	<b>416</b>	<b>480</b>

### Imaging Memory (in megabytes) Needed for the Printer Interface \*

(\* does not include memory for operating system, device drivers, services, and applications.)

### Image Data Buffer Size Guidelines for the Scanner Interface

Use figures below as the minimum settings for the Data Buffer Size in the Scanner Interface.

<b>Scanner</b>	<b>MB</b>
7336	33
7396	33
7399	33
7356	8
8180	8
MAX 200	8

The 7336 and 7396 will need more memory if the scans are longer than standard E or A0 lengths. The other scanners will automatically slow down if the scans are longer, so no additional memory will be needed. The guidelines below will assist you in calculating extra Data Buffer Size allocations needed for long scans on the 7336 and 7396.

With an extra 33 MB of memory allocated in the Data Buffer Size, you will gain the following scan length for each media width.

<b>33MB will give extra length of:</b>	<b>Media Width</b>	<b>33MB will give extra length of:</b>	<b>Media Width</b>
155 in	for 11 in	5202 mm	for 210 mm
142 in	for 12 in	3656 mm	for 297 mm
100 in	for 18 in	2601 mm	for 420 mm
94 in	for 22 in	1840 mm	for 594 mm
71 in	for 24 in	1307 mm	for 814 mm

57 in	for 30 in	4294 mm	for 257 mm
50 in	for 34 in	3006 mm	for 364 mm
48 in	for 36 in	2130 mm	for 515 mm
		1503 mm	for 728 mm
		1202 mm	for 914 mm

Maximum scan lengths are approximate and are dependent on the physical memory available, and the applications, device drivers, services, etc., using the memory and operating system on your computer at the time of scanning. Users might see a slight difference in lengths during actual operation.